

APCD Update: Air Quality in Louisville

**Michelle King,
Executive Administrator
Air Pollution Control District
April 14, 2016**



Criteria Pollutants

- Endanger public health and welfare
- Come from a variety of sources
- Common throughout the United States

Carbon Monoxide

Lead

Sulfur Dioxide

Oxides of Nitrogen

Particulate Matter

Ozone

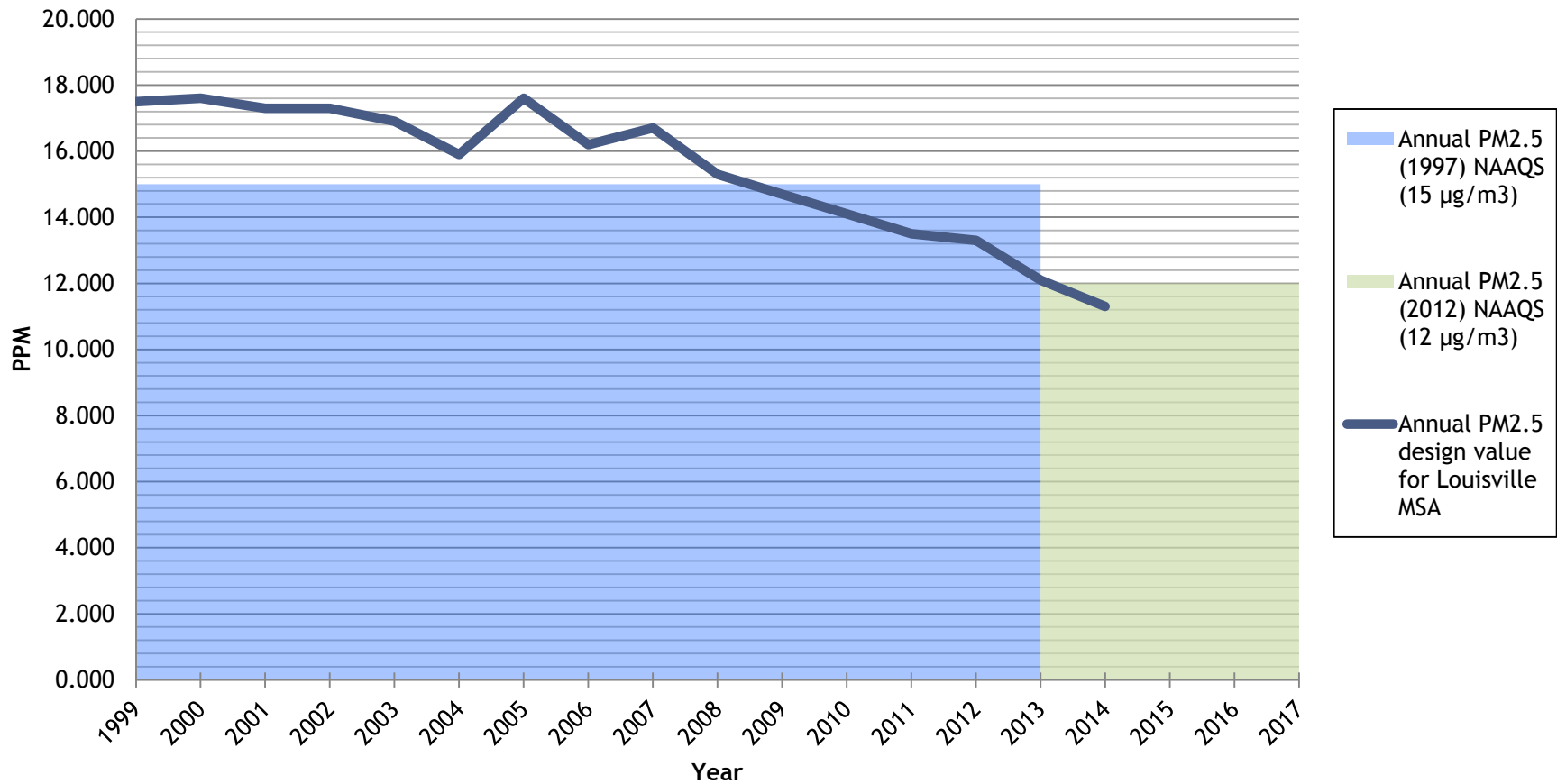
NAAQS Attainment

Current Status - Louisville

Pollutant	Standard	Averaging Time	Attainment Status
Carbon Monoxide	9 ppm	8-hour	Attainment
	35 ppm	1-hour	Attainment
Lead	0.15 $\mu\text{g}/\text{m}^3$	Rolling 3-Mo Average	Attainment
Nitrogen Dioxide	0.053 ppm	Annual Average	Attainment
	0.10 ppm	1-hour	Attainment
Particulate Matter (PM10)	150 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Particulate Matter (PM2.5)	15.0 $\mu\text{g}/\text{m}^3$	Annual Average	Nonattainment
	12.0 $\mu\text{g}/\text{m}^3$	Annual Average	Unclassifiable
	35 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Ozone	0.075 ppm	8-hour	Attainment
	0.070 ppm	8-hour	TBD
Sulfur Dioxide	0.75 ppm	1-hour	Partial Nonattainment
	0.5 ppm	3-hour	Attainment

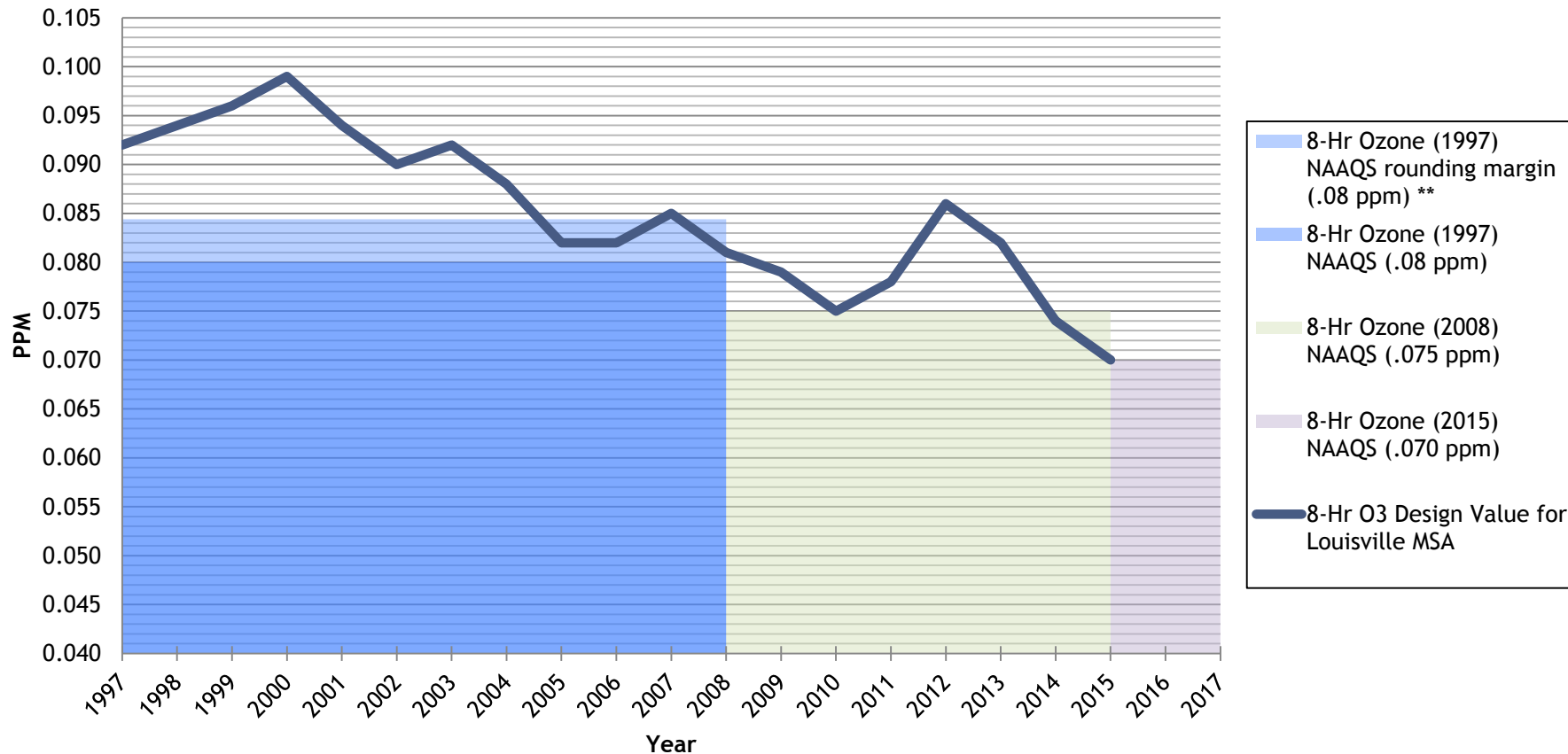
Louisville's Fine Particle History

Annual PM_{2.5} - Louisville, KY MSA
NAAQS and Annual Air Monitoring Design Values



Louisville's Ozone History

Ozone - Louisville, KY MSA
NAAQS and Annual Air Monitoring Design Values



Historical Ozone Standards

1971	Primary and Secondary	Total photochemical oxidants	1-hour	80 ppb	Not to be exceeded more than one hour per year
1979	Primary and Secondary	O ₃	1-hour	120 ppb	Attainment is defined when the expected number of days per calendar year, with maximum hourly average concentration greater than 0.12 ppm, is equal to or less than 1
1993	EPA decided that revisions to the standards were not warranted at the time				
1997	Primary and Secondary	O ₃	8-hour	80 ppb	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2008	Primary and Secondary	O ₃	8-hour	75 ppb	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years

The New Ozone Standard

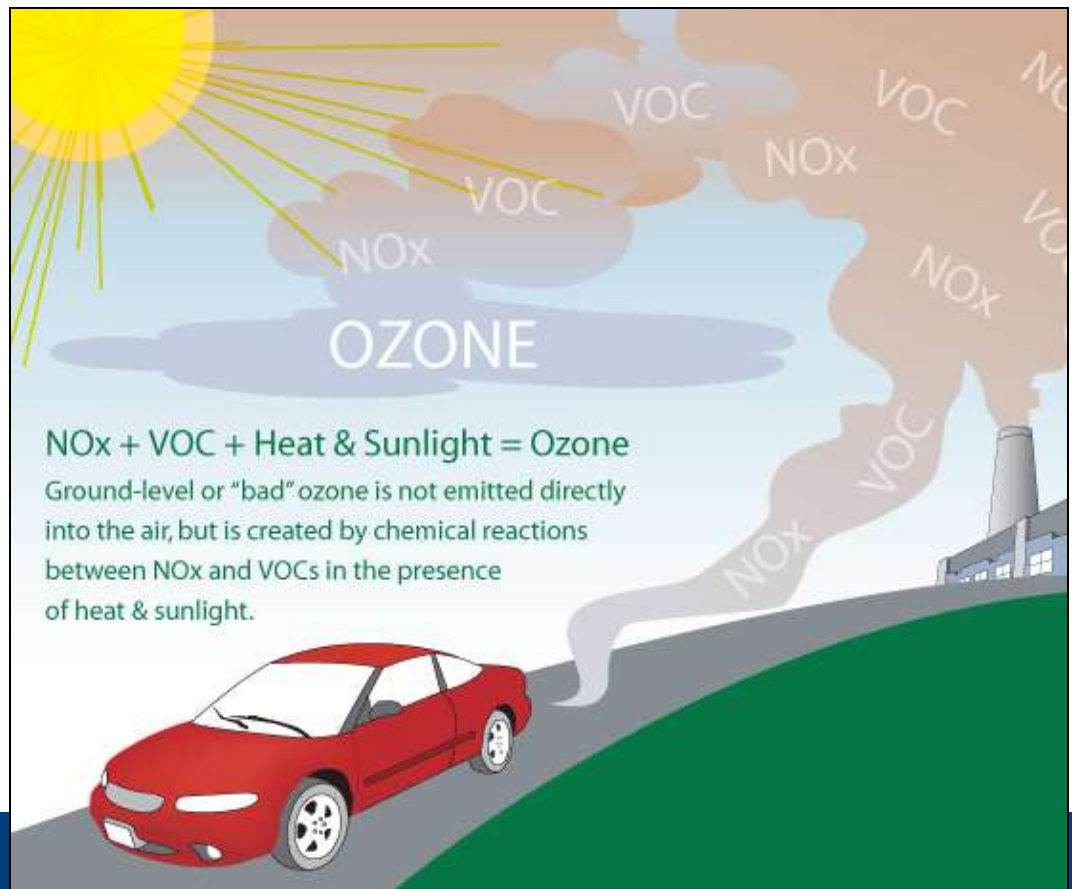
- The Clean Air Act requires the EPA to periodically review standards for criteria pollutants to be sure that they continue to protect public health and the environment.
- The previous ozone standard was 75 ppb.
- In October, the EPA finalized a new ozone standard of 70 ppb to significantly reduce ozone air pollution and provide an adequate margin of safety to protect at-risk groups.

What is Ozone?

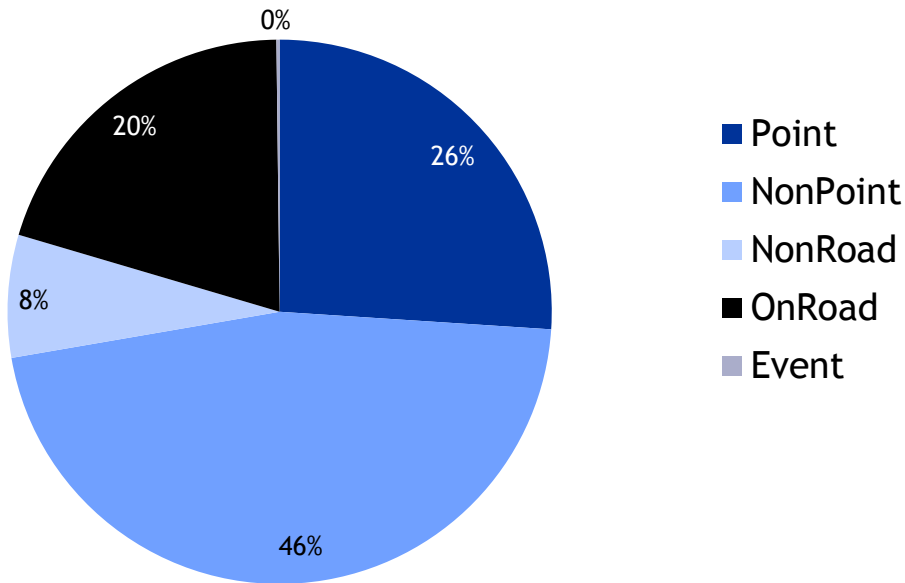
- Created via a chemical reaction:
NOx + VOCs + Sunlight & Heat = O₃

- Ozone season:
March-October

- Health effects:
 - Shortness of breath
 - Inflammation of airways
 - Aggravate lung disease
 - Increase frequency of asthma attacks



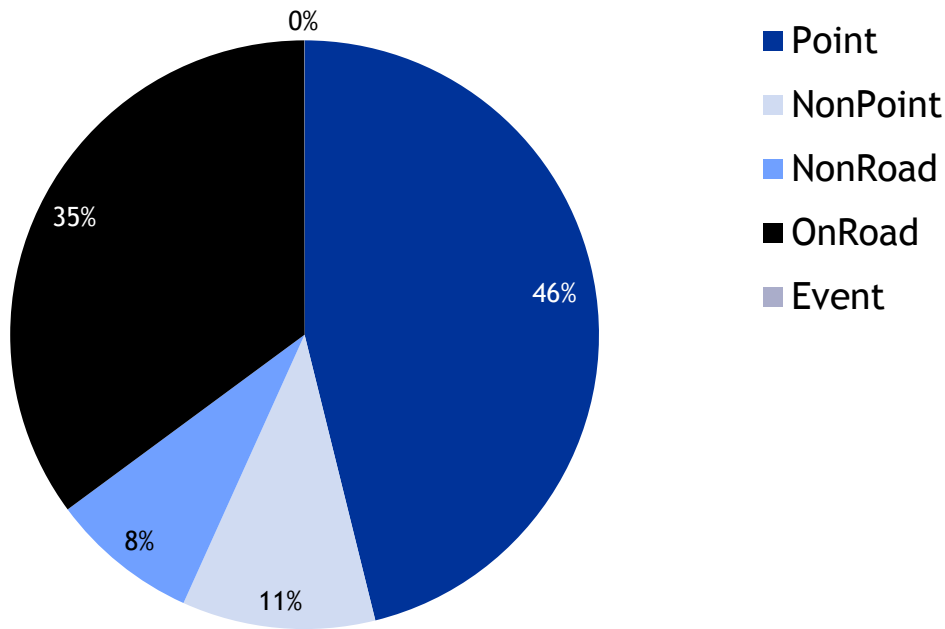
Volatile Organic Compounds



Data from 2011 National Emissions Inventory



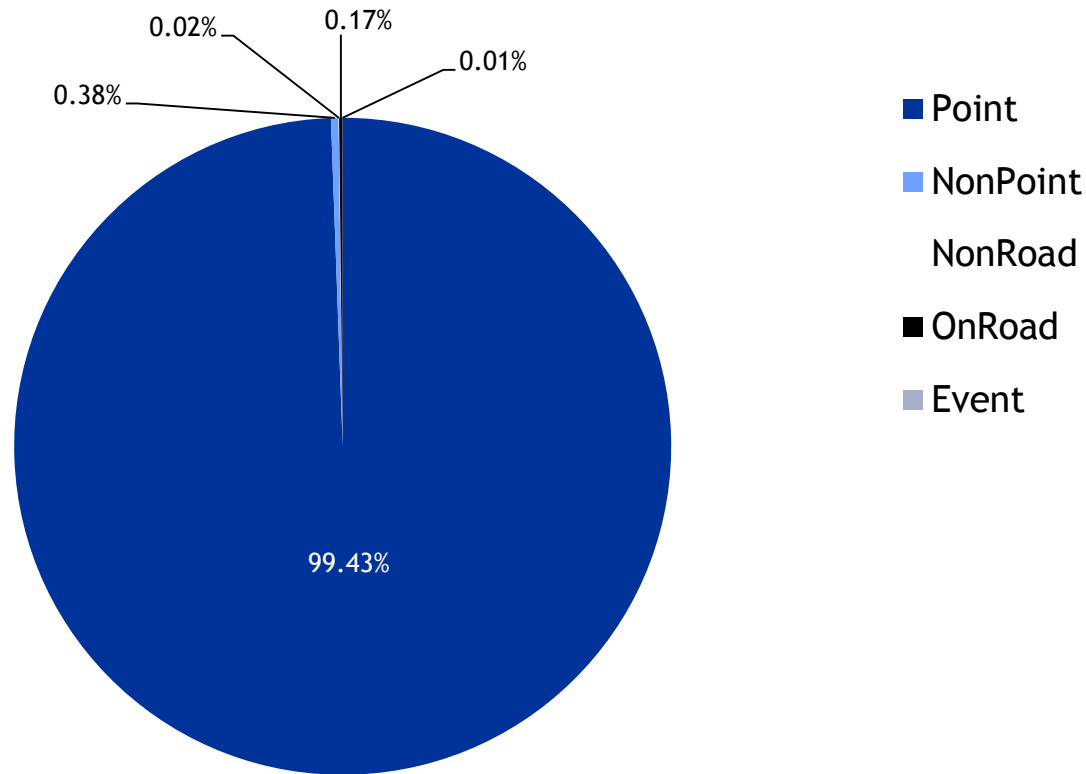
Oxides of Nitrogen



Data from 2011 National Emissions Inventory



Sulfur Dioxide

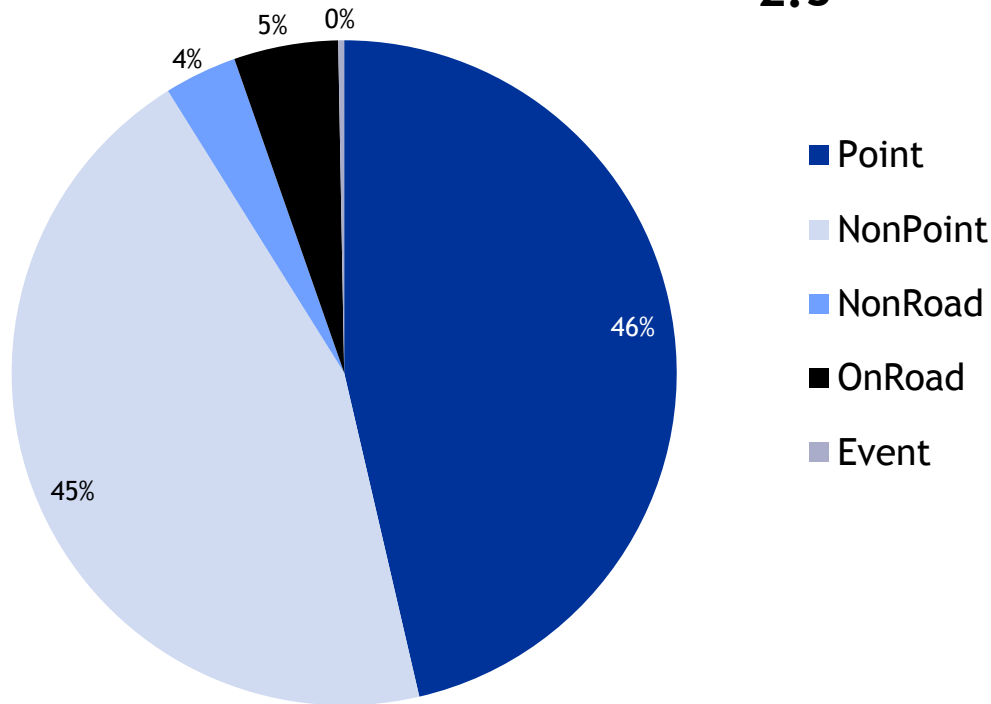


Data from 2011 National Emissions Inventory



Fine Particulates

$PM_{2.5}$



Data from 2011 National Emissions Inventory



Educate & Assist

- Provide community outreach programs
 - Kentuckiana Air Education (KAIRE)
- Assist businesses with air quality issues
- Investigate complaints
- Apply for grant funding
- Facilitate stakeholder involvement
- Participate in community initiatives
- Promote emission reduction programs
 - Idle Free Louisville
 - Grow More Mow Less
 - Lawn Care for Cleaner Air



Outreach & Education

Continuing to increase KAIRE's social media connections on Twitter and Facebook.



Outreach & Education

KAIRE worked with the Nulu Business Association and six Idle Free Louisville street signs were installed in the district near downtown



Outreach & Education

Idle Free Louisville posters are displayed in businesses, schools & other establishments, including this one at Assumption High School



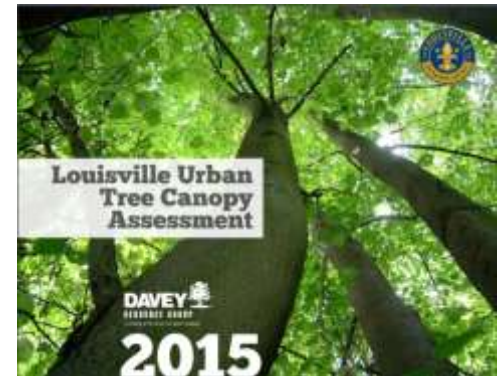
Outreach & Education

KAIRE
participated in
dozens of
community
events in
Kentuckiana,
including Healthy
Hoops Kentucky



Policy & Program Development

- Green Infrastructure/Tree Canopy
 - Urban Heat Island reduction
 - Pollution reduction
 - Reduce energy use
 - Cut emissions from gas/diesel lawn equipment
- Transportation Planning/Land Development
 - Complete Streets
 - Air Quality Analysis – Plan Review
 - Expanded alternative transportation choices
 - MOVE Louisville
- Vehicle and Equipment Technology
 - Clean engines
 - Clean fuels
 - Idle reduction



APCD is constantly seeking opportunities to collaborate with the community.

Louisville Metro Air Pollution Control District

701 W. Ormsby Ave.
Louisville, Ky. 40203

(502) 574-6000

www.louisvilleky.gov/APCD

www.twitter.com/louapcd